



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## NOTES FROM PACIFIC COAST OBSERVATORIES.

STUDENTS' OPINIONS OF THE EDUCATIONAL ADVANTAGES OF THE  
STUDY OF ASTRONOMY.

In the final examination of the course in General Astronomy the question was put, "Discuss the educational advantages of the study of astronomy." The readers of the *Publications* may be interested in some of the answers.

One wrote, "I think that the greatest value I have derived from astronomy is cultural, the knowledge of the fundamental facts of the universe. First, and above all, the order and harmony of the universe have impressed me. I have realized my own insignificance and that of all the inhabitants of the Earth in general when compared with the greatness and grandeur of the Universe. Astronomy develops the imagination from the very vastness of the subject and the enormous field for speculation. The study has also been of great value to me in explaining the countless astronomical allusions in literature, especially poetry. The study of astronomy, like that of any other science, is an excellent mental drill. It develops accuracy and precision of thought and logical reasoning. I think it has been of especial value to me in this respect, as my other work has been principally in languages and literature. A knowledge of the elementary facts about the Sun, Moon, stars and planets is very useful even in ordinary conversation and it gives one great personal satisfaction, at any rate, to be able to account for the many phenomena of such frequent occurrence that are explained by astronomy. This course has helped me to a more just appreciation of the inestimable value of astronomy and all the other sciences, and the service and benefits of scientific research and investigation for humanity. After studying astronomy, even this short time, I am so struck by the order and beauty of the universe that I never could doubt the existence of a divine mind which has created and presided over this perfect harmony."

Another wrote, "Education goes hand in hand with culture. Culture may be defined, in general, as breadth of mind. Of course breadth of mind alone—without polished manners, for instance,—does not comprise the whole of culture; but it is, perhaps, the most important attribute of a cultivated man. The educational value of any course in college may, therefore, be determined by a proper consideration of its cultural value.

"The cultural value of a science course has always been admitted. The science of astronomy is the oldest in existence. The course which I have pursued in this science has, therefore, afforded me an excellent opportunity to test the cultural value of science. The result of that test is satisfactory; perhaps more satisfactory than the results of a similar test carried on with one of the other sciences would have been. What did I get out of this course to give me that satisfaction?

"I shall not go into detail and tell all I learned about astronomical calculations and facts. I shall simply state the points of culture impressed upon my consciousness in the course of the lectures and study.

"Breadth of mind, I have said, is the prime requisite of culture. The narrower one's outlook is, the more important he is in his own estimation. How tiny is this great world of ours in the vastness of the universe of stars! How infinitely small is the greatest of her inhabitants! When I began to study astronomy I had some idea of these things because I used to read the talks upon astronomy given in the newspapers; but that did not impress me so much with my own insignificance as the actual study of astronomy has. Everything touched upon has led to that same conclusion—how insignificant we all are after all.

"Then too, the nicety of it all has impressed me; its mathematical accuracy. And yet, this grand, impressive science of the universe—perhaps of the universe of universes—is intensely practical. Time—'the stuff that life is made of' according to Benjamin Franklin—depends upon the stars. The navigator would be hopelessly lost at sea but for the science of astronomy. The sciences of physics and chemistry—perhaps the most practical of all sciences—would lack some of their most important data but for astronomy. It is impressive to learn of the extent to which this father of sciences influences all of the world's activities.

"But to turn away from the practical, let me make one more remark. I cannot look thru a telescope at a planet—especially Saturn—or look at a projection on the screen of a photograph of a spiral nebula—perhaps another universe—without a deep feeling of awe and reverence. Lastly I cannot look back upon my study of astronomy without feeling that I am a better scholar and a more cultured gentleman because of it."

Extracted from another is "As an educational factor astronomy must be given first place in the sciences. Now, by education, I

mean something bigger and broader than the accumulating of mere facts. I might, for example, by an exhaustive study of a single leaf, learn more cold facts about that leaf than had ever before been known. And these facts might be of vast importance to the welfare of man. My botanical study, if sufficiently valuable, I might advertise and sell and pile up my riches; astronomy would never make me rich. I might, because of the study of the leaf, deteriorate into a crusty old fossil, growling at everyone, getting my amusement from the contemplation of a heaven for my own worthless soul and a grewsome place of torment for my foes. . . .

"On the other hand, were I to place the effort on astronomy, the effect would be to broaden my outlook. I might watch in awe the majestic sweep of the heavenly bodies and contemplate the tremendous distances of space. I would begin to realize the pettiness of humanity. I should realize that 'my Earth,' the all in all before, is so pitifully small that from the greater part of the heavenly bodies it could not be viewed at all. I should realize that it is but an insignificant unit amid myriads of units and laugh at the pettiness of man who places such pride in his efforts. I could appreciate the whole grim tragedy in the lives of humans who ascribed to themselves the honor of being God's own elect, who thought that the Earth was the center of the universe, and that the stars and Sun were in existence but to guide their actions on this world. I would appreciate the more fully, rather than deprecate, the efforts of man and his partial success in his struggles against his limitations. Perhaps I might grow cold of intellect, but that would be unfortunate and point to my own pettiness. At least I would be lifted from my rut and made bold to question revelations without clutching at my heart. . . .

"Of course I realize and practice the doctrine that man must, to the greatest extent of his power, work to improve his environment. He is damned to eternal unrest, for 'only inasmuch as people are discontented is there any hope for them.' He seeks happiness and this true happiness lies only in his endeavor to adjust himself to his environment. It is, as it were, a check on the conceit of natural science, that astronomy serves in its unselfish aim to inspire men's minds with the contemplation of thoughts which transcend even the limitations of the stellar universe."

R. T. CRAWFORD.

Berkeley Astronomical Department.

June 21, 1917.